

Notice of Allowability

Application No.

10/718,919

Examiner

Trinh Vo Dinh

Applicant(s)

TIMOFEEV ET AL.

Art Unit

2821

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to an RCE filed 11/20/2006.
2. ☒ The allowed claim(s) is/are 1,2,4-7,9-14,16-18,20,21,23,25-31,33 and 34.
3. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) ☐ All b) ☐ Some* c) ☐ None of the:
 1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
 5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
 - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
 - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
 - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☐ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3. ☐ Information Disclosure Statements (PTO/SB/08), Paper No./Mail Date _____
4. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material

5. ☐ Notice of Informal Patent Application
6. ☒ Interview Summary (PTO-413), Paper No./Mail Date 01/03/2008
7. ☒ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other _____

TRINH DINH
PRIMARY EXAMINER

Examiner's Amendment

An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with *Robert C. Klinger on January 19, 2007.*

The following changes have been made to the subject application:

Claim 1 has been amended as the following:

1. (Currently Amended) An antenna, comprising:
 - a ground plane having an upper surface and an opposing lower surface;
 - a plurality of dipoles extending outwardly from the upper surface;
 - a set of feedlines disposed proximate the upper surface and coupled to the dipoles;
 - a set of striplines disposed upon the lower surface and coupled through the ground plane to the set of feedlines, ~~wherein the set of striplines have a plurality of serpentine portions each having a respective said dielectric member slidingly disposed thereupon; and~~
 - at least one sliding dielectric member adjustably disposed proximate a portion of the set of striplines and adapted to shift a phase velocity of a signal communicating therepast to the dipoles, wherein the set of striplines have a plurality of serpentine portions each having a respective said dielectric member slidingly disposed thereupon.

Claim 10 has been amended as the following:

10. (Currently Amended) An antenna array comprised of a plurality of antennas, each antenna comprising:

a ground plane having an upper surface and an opposing lower surface, the ground plane having bent edges adapted to control a lateral beam lobe of the respective antenna;

a plurality of dipoles extending outwardly from the upper surface wherein a portion of one of the ground plane bent edge[s] is angled inwardly toward the dipoles at an angle less than 90 degrees with respect to the ground plane and is configured to improve a front-to-back ratio of the antenna array.

Claim 30 has been amended as the following:

30. (Currently Amended) An antenna array comprised of a plurality of antennas, each antenna comprising:

a ground plane having an upper surface and an opposing lower surface;

a plurality of dipoles extending outwardly from the upper surface;

a set of feedlines disposed proximate the upper surface and coupled to the dipoles; a set of striplines disposed upon the lower surface and coupled through the ground plane to the set of feedlines, ~~wherein the set of striplines have a plurality of serpentine portions each having a respective said dielectric member slidably disposed thereupon; and~~

at least one sliding dielectric member adjustably disposed proximate a portion of the set of striplines and adapted to shift a phase velocity of a signal communicating therepast to the

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dipoles, wherein the set of striplines have a plurality of serpentine portions each having a respective said dielectric member slidingly disposed thereupon.

The Examiner's amendment has been made in order to provide antecedent basis for claimed element of "said dielectric member" and "the ground plane bent edge" and to distinguish the claimed invention over cited art of record as well. Doing so would comply with 35 U.S.C. 112 second paragraph and overcome the cited art of record in order to place the application in a condition for allowance.

Reasons for Allowance

1. Claims 1-2, 4-7, 9-14, 16-18, 20-21, 23, 25-31 and 33-34 are presently allowed.
2. The following is an examiner's statement of reasons for allowance:

The cited art of record fails to teach an antenna comprising a plurality of dipoles extending outwardly from an upper surface of a ground plane, a set of striplines disposed upon the lower surface and coupled through the ground plane to the set of feedlines, and at least one sliding dielectric member adjustably disposed proximate a portion of the set of striplines and adapted to shift a phase velocity of a signal communicating therepast to the dipoles, wherein the set of striplines have a plurality of serpentine portions each having a respective said dielectric member slidingly disposed thereupon as defined in claims 1 and 30, or wherein a second ground plane disposed on the electrically non-conductive member and opposing the set of striplines as defined in claims 29 and 31, or an antenna array comprised of a plurality of antennas, each antenna including a ground planes having bend edges adapted to control a lateral beam lobe of the respective antenna and a plurality of dipoles extending outwardly from the upper surface wherein a portion of the ground plane bent edge inwardly toward the dipoles at an angle less than

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90 degrees with respect to the ground plane and is configured to improve a front-to-back ratio of the antenna array as defined in claim 10.

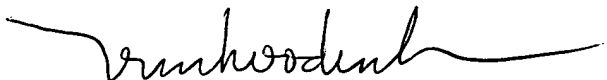
3. Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Inquiry

4. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Trinh Vo Dinh whose telephone number is (571) 272-1821. The examiner can normally be reached on Monday to Friday from 9:30AM to 6:00PM. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

*Art unit 2821
January 19, 2007*



**TRINH DINH
PRIMARY EXAMINER**